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EXAMINER

BAREFORD, KATHERINE A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,804	Applicant(s) SPRIESTERSBACH ET AL.	
	Examiner Katherine A. Bareford	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-36 is/are pending in the application.
- 4a) Of the above claim(s) 33-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 18-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/22/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The preliminary amendment of December 22, 2005 has been received and entered. With the entry of the amendment, claims 1-17 are canceled and claim 18-36 are pending. The preliminary amendment of June 20, 2007 as to the specification has also been received and entered.

Election/Restrictions

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 18-32, drawn to a process of making.

Group II, claim(s) 33-36, drawn to a product.

3. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the groups require the technical feature of a protection coating for reinforced concrete comprising a layer of zinc connected to armor in an electrically conductive way, a layer of low viscosity polymers in a continuous film and a further surface protection layer over the polymer layer, but this technical feature is not a special technical feature as it does not make a contribution over the prior art in view of Japan 11-081502, which provides the layer of zinc connected to the armor (reinforcing bars) in an electrically conductive way and a further continuous layer of polymer film that can be low viscosity material such as epoxy (low viscosity, as shown by applicant's claim 21) (abstract and paragraph [0012] and figure 13) and as to a further "surface protection layer", as noted by In re Harza,

274 F.2d 669, 124 USPQ 378 (CCPA 1960), duplication of parts, such as, in this case, duplication of the polymer layer to provide a second polymer layer, would have no patentable significance.

4. During a telephone conversation with Curtis Herbert on June 12, 2009 a provisional election was made with traverse to prosecute the invention of Group I, claims 18-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 33-36 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

6. The disclosure is objected to because of the following informalities: at page 2, lines 5-10, of the specification, the reference to specific claims should be removed.

Appropriate correction is required.

Claim Objections

7. Claim 22 is objected to because of the following informalities: claim 22, line 2, "crack-bridging layer a wear layer" should be "crack-bridging layer, a wear layer" for proper grammar.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 31-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification and claims as originally filed always provide that the invention at least requires providing a first layer of zinc, a second layer of low viscosity polymers to said first layer as a continuous film and applying a surface protection layer on the second layer (see page 2, lines 10-23 of the specification). Claim 31, as provided with the preliminary amendment of December 22, 2005, contains new matter because the scope of the disclosure as filed did not include that a zinc layer could be provided and only one other layer, a "cover sealing layer" required, where this did not have to be a

low viscosity polymer layer and could be applied under or over the zinc layer as claimed.

The other dependent claim does not cure the defects of the claim from which it depends.

10. Claim 30 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims and specification use the term "bitumen welding sheet" to describe the possible "surface protection layer", however, this is not a generally known term of the art so it is unclear and undefined as to what is required by this terminology. As a result, one would not be able to determine what is to be provided as the layer, and thus not be able to make and/or use the invention.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 18-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18, line 4, "metal armoring" is unclear as to what is required by this terminology. Does applicant mean a metal layer already present on the concrete or metal material acting as reinforcing in the concrete, for example? For the purpose of examination either is understood to be acceptable, however, applicant should clarify what is required without adding new matter.

Claim 18, line 5, "low" is vague and indefinite as to the viscosity. It is unclear what would be the difference between something considered "low" and what would be considered "high", for example, as to this relative term. For the purpose of examination, the Examiner understands any polyurethane or epoxy to meet the claim as described in claim 21.

Claim 18, line 5, "polymers" is unclear what is required, as claim 21 appears to indicate that one type of polymer (polyurethane or epoxy) can be used. For the purpose of examination, the Examiner understands any specific polymer or blend of polymers can meet this requirement.

Claim 20, line 1, "sprayed" is unclear if the zinc alloy is also thermally sprayed.

Claim 26, line 2, it is unclear what is required by "technically equivalent"

Claim 29, line 1, it is unclear what is required by “cover sealing layer”. Is this a fourth layer or can it be the same as the third layer “surface protection layer”? For the purpose of examination, the Examiner understands that either can be the case.

Claims 30 and 32, it is unclear what is required by “bitumen welding sheet” as noted in the 35 USC 112, first paragraph rejection above. For the purpose of examination, the Examiner understands that a layer containing bitumen will meet this requirement.

Claim 31, line 4, “metal armoring” is unclear as to what is required by this terminology. Does applicant mean a metal layer already present on the concrete or metal material acting as reinforcing in the concrete, for example? For the purpose of examination either is understood to be acceptable, however, applicant should clarify what is required without adding new matter.

Claim 31, line 5, “cover sealing layer” is unclear as to whether this is applied over the zinc layer or not. For the purpose of examination either is understood to be acceptable, however, applicant should clarify what is required without adding new matter.

The other dependent claims do not cure the defects of the claims from which they depend.

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by Japan 11-081502 (hereinafter '502).

'502 provides a process for preparing a multilayer surface protection coating for reinforced concrete for improving the corrosion protection of the concrete structure. Abstract and figure 13. A first layer comprising zinc connected with metal armoring (steel reinforcing bar) in an electrically conductive way is applied. Abstract and paragraph [0004] and figure 13. A cover sealing layer in the form of a polymer film is applied over the zinc. Abstract, figure 13 and paragraph [0012].

15. Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by Spriestersbach et al (US 6376102) (hereinafter Spriestersbach '102).

Spriestersbach '102 provides a process for preparing a multilayer surface protection coating for reinforced concrete for improving the corrosion protection of the concrete structure. Column 1, lines 5-12 and column 2, lines 25-35. A first layer comprising zinc (zinc/aluminum alloy layer) connected with metal armoring (first zinc layer) in an electrically conductive way (since directly over) is applied. Column 2, lines

25-35. A cover sealing layer (closes pores) in the form of a polyurethane layer is applied over the zinc/aluminum alloy. Column 2, lines 25-35.

16. Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by Knepper et al (US 6224943).

Knepper provides a process for preparing a multilayer surface protection coating for reinforced concrete with metal armoring for improving the corrosion protection of the concrete structure. Claim 1 and column 2, line 65 through column 3, line 20. A first layer comprising zinc connected with metal armoring in an electrically conductive way is applied. Claims 1 and 3. A cover sealing layer (closes pores) in the form of a polyurethane layer is applied over the zinc. Claim 1 and column 3, lines 5-15. A further cover sealing layer would also be applied in the form of an epoxy. Claim 5 and column 3, lines 15-20.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over '502 as applied to claim 31 above, and further in view of Shihadeh (US 3980597).

'502 teaches all the features of this claim except the bitumen cover sealing layer.

However, Shihadeh teaches that it is well known to provide bitumen (tar)/polyurethane containing sealing layers against concrete/reinforced concrete surfaces to seal against the weather. Column 1, lines 20-30, column 3, lines 1-10, column 4, lines 10-25 and 50-55 and figure 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '502 to provide a sealing layer containing bitumen over the provided layer coated reinforced concrete to provide further weather protection in use as suggested by Shihadeh, as Shihadeh provides that this is a desirable protection for reinforced concrete articles.

20. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spriestersbach '102 as applied to claim 31 above, and further in view of Shihadeh (US 3980597).

Spriestersbach '102 teaches all the features of this claim except the bitumen cover sealing layer.

However, Shihadeh teaches that it is well known to provide bitumen (tar)/polyurethane containing sealing layers against concrete/reinforced concrete surfaces to seal against the weather. Column 1, lines 20-30, column 3, lines 1-10, column 4, lines 10-25 and 50-55 and figure 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spriestersbach '102 to provide a sealing layer containing bitumen over the provided layer coated reinforced concrete to provide further weather protection in use as suggested by Shihadeh, as Shihadeh provides that this is a desirable protection for reinforced concrete articles.

21. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knepper as applied to claim 31 above, and further in view of Shihadeh (US 3980597).

Knepper teaches all the features of this claim except the bitumen cover sealing layer.

However, Shihadeh teaches that it is well known to provide bitumen (tar)/polyurethane containing sealing layers against concrete/reinforced concrete

surfaces to seal against the weather. Column 1, lines 20-30, column 3, lines 1-10, column 4, lines 10-25 and 50-55 and figure 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Knepper to provide a sealing layer containing bitumen over the provided layer coated reinforced concrete to provide further weather protection in use as suggested by Shihadeh, as Shihadeh provides that this is a desirable protection for reinforced concrete articles.

22. Claims 18, 19, 21-24 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 11-081502 (hereinafter '502), alone, or optionally, further in view of Heimann et al (US 6106741).

Claim 18: '502 provides a process for preparing a multilayer surface protection coating for reinforced concrete for improving the corrosion protection of the concrete structure. Abstract and figure 13. A first layer comprising zinc connected with metal armoring (steel reinforcing bar) in an electrically conductive way is applied. Abstract and paragraph [0004] and figure 13. A second layer in the form of a polymer film is applied over the zinc in what is shown as a continuous coating of low viscosity polymer such as epoxy. Abstract, figure 13 and paragraph [0012].

'502 does not explicitly provide that a third layer, a surface protection layer, is provided over the second layer of polymer. However, (1) as to '502 alone, as noted by In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), duplication of parts, such as, in

this case, duplication of the polymer layer to provide a second polymer layer, would have no patentable significance. For example, two thin layers of the polymer could be provided rather than one thick layer. (2) as to '502 in view of Heimann, Heimann further shows providing corrosion protection for metals by way of surface coatings (column 1, lines 15-30), where the surface to be protected can include existing structures with metal reinforcement (column 10, lines 40-45) and a surface base coated with zinc (column 17, lines 25-30), and the protective coating can be applied as a series of continuous (note the thickness) polymer films, such as three layers of polyurethane containing films to provide different features in the different layers (column 14, line 60 through column 15, line 35) and applied as low viscosity polymers (column 23, lines 35-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '502 to apply multiple polymer layers as taught by Heimann to provide different protective features on the zinc coating of '502 given that Heimann teaches the protection can be desirable on zinc coated surfaces and structures with metal reinforcement.

Claim 19: '502 provides that the first layer (zinc) is provided by thermal spraying. Abstract.

Claim 21: (1) '502 provides that the polymer layer can be epoxy. Paragraph [0012]. (2) for '502 in view of Heimann, Heimann also provides layers of polyurethanes and epoxies. Column 15, lines 25-30.

Claim 22: (1) '502 provides that the polymer layer will help be a wear layer, for example (increases endurance). Paragraph [0012]. (2) for '502 in view of Heimann, Heimann also provides layers with various features, including wear and sealing. Column 12, lines 35-45.

Claim 23: (1) '502 provides that various resins can be used, which would suggest that mixtures of these resins can be used to provide the desired features. Paragraph [0012]. (2) for '502 in view of Heimann, Heimann also provides that various resins can be used, which would suggest that mixtures of these resins can be used to provide the desired features. Column 15, lines 25-30.

Claim 24: (1)'502 provides that epoxy coatings (elastomeric as shown in claim 26) can be provided and the coating will be crack bridging to at least some extent because the layer will cover the crack. Paragraph [0012]. (2) for '502 in view of Heimann, Heimann also provides that epoxy and polyurethane coatings can be used, and the thickness of the film would also provide crack bridging to at least some extent because the layer will cover the crack. Column 15, lines 1-30.

Claims 27-28: (1) '502 provides the use of epoxy coatings, which would at least be suggested to be thermosetting as the same materials of claim 28 are provided, indicating that epoxies are conventionally thermosetting. Paragraph [0012]. (2) for '502 in view of Heimann, Heimann also provides that epoxy and polyurethane coatings can be used, and that the coating can be thermosetting. Column 15, lines 25-30 and column 22, lines 35-45.

Claim 29: (1) '502 provides the suggestion of a further third polymer layer by the same duplication of parts reasoning provided for claim 18. (2) for '502 in view of Heimann, Heimann also provides that a third "sealing" layer can be provided. Column 15, lines 1-15.

23. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over '502, alone, or optionally, further in view of Heimann as applied to claims 18, 19, 21-24 and 27-29 above, and further in view of Spriestersbach et al (US 6376102) (hereinafter Spriestersbach '102).

'502, alone, or optionally, further in view of Heimann teaches all the features of this claim except the zinc alloy layer.

However, Spriestersbach '102 teaches that it is well known when providing a sprayed zinc layer on reinforced concrete to further provide a zinc alloy layer on the zinc layer by spraying before applying a polymer layer. Column 2, lines 10-35 and column 1, lines 5-12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '502, alone, or optionally, further in view of Heimann to further provide a zinc alloy layer on the zinc layer as suggested by Spriestersbach '102 in order to provide a desirable protection of reinforced concrete as suggested by Spriestersbach '102.

24. Claims 25, 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over '502, alone, or optionally, further in view of Heimann as applied to claims 18, 19, 21-24 and 27-29 above, and further in view of Shihadeh (US 3980597).

'502, alone, or optionally, further in view of Heimann teaches all the features of these claims except (1) the reinforcing of the crack-bridging layer with glass fiber fabric (claims 25, 26) and (2) the bitumen surface protection layer (claim 30).

However, Shihadeh teaches that it is well known to provide bitumen (tar)/polyurethane containing sealing layers against concrete/reinforced concrete surfaces to seal against the weather. Column 1, lines 20-30, column 3, lines 1-10, column 4, lines 10-25 and 50-55 and figure 1. The coating can also be provided with cloth or fiberglass underlays or inlayers. Column 5, lines 45-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '502, alone, or optionally, further in view of Heimann to provide a sealing layer containing bitumen over the provided layer coated reinforced concrete to provide further weather protection in use as suggested by Shihadeh, as Shihadeh provides that this is a desirable protection for reinforced concrete articles. Furthermore, the layer would also bridge cracks because of its thickness and would be suggested to have a glass fiber (fiberglass) fabric reinforcement inlay given the teaching of Shihadeh to provide cloth or fiberglass inlayers in the coating, which would suggest that the fiberglass can also be provided in a "cloth" or "fabric" form, given the use of both cloth and fiberglass.

25. Claims 18-24 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spriestersbach et al (US 6376102) (hereinafter Spriestersbach '102), alone, or optionally, further in view of Heimann et al (US 6106741).

Claim 18: Spriestersbach '102 provides a process for preparing a multilayer surface protection coating for reinforced concrete for improving the corrosion protection of the concrete structure. Column 1, lines 5-12 and column 2, lines 10-35. A layer comprising zinc/aluminum alloy connected with metal armoring (first zinc layer, for example) in an electrically conductive way (since directly on the zinc) is applied. Column 2, lines 10-35. A second layer in the form of a polymer film is applied over the zinc/aluminum alloy of low viscosity polymer such as polyurethane. Column 2, lines 25-35. This polymer layer would be at least suggested to be continuous because it "at least" closes the pores (and thus can be thicker) and a thickness of 50 to 100 microns is applied. Column 2, lines 30-35.

Spriestersbach '102 does not explicitly provide that a third layer, a surface protection layer, is provided over the second layer of polymer. However, (1) as to Spriestersbach '102 alone, as noted by *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), duplication of parts, such as, in this case, duplication of the polymer layer to provide a second polymer layer, would have no patentable significance. For example, two thin layers of the polymer could be provided rather than one thick layer. (2) as to Spriestersbach '102 in view of Heimann, Heimann further shows providing corrosion

protection for metals by way of surface coatings (column 1, lines 15-30), where the surface to be protected can include existing structures with metal reinforcement (column 10, lines 40-45) and a surface base coated with zinc (column 17, lines 25-30), and the protective coating can be applied as a series of continuous (note the thickness) polymer films, such as three layers of polyurethane containing films to provide different features in the different layers (column 14, line 60 through column 15, line 35) and applied as low viscosity polymers (column 23, lines 35-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spriestersbach '102 to apply multiple polymer layers as taught by Heimann to provide different protective features on the zinc coating of Spriestersbach '102 given that Heimann teaches the protection can be desirable on zinc coated surfaces and structures with metal reinforcement.

Claim 19: Spriestersbach '102 provides that the first layer (zinc/aluminum alloy) is provided by thermal spraying. Column 2, lines 25-35.

Claim 20: As to another zinc alloy layer, Spriestersbach '102 does not explicitly provide that another layer of zinc/aluminum alloy is provided over the applied zinc/aluminum alloy. However, as noted by *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), duplication of parts, such as, in this case, duplication of the zinc/aluminum alloy layer to provide a second zinc/aluminum alloy layer, would have no patentable significance. For example, two thin layers of the zinc/aluminum could be provided rather than one thick layer.

Claim 21: (1) Spriestersbach '102 provides that the polymer layer can be polyurethane. Paragraph [0012]. (2) for Spriestersbach '102 in view of Heimann, Heimann also provides layers of polyurethanes and epoxies. Column 15, lines 25-30.

Claim 22: (1) Spriestersbach '102 provides that the polymer layer will be a sealing layer, for example (closes pores). Column 2, lines 30-35. (2) for Spriestersbach '102 in view of Heimann, Heimann also provides layers with various features, including wear and sealing. Column 12, lines 35-45.

Claim 23: (1) Spriestersbach '102 provides that a sealing layer can be used (column 2, lines 30-35) and the Examiner takes Official Notice that polymer sealing layers are known to conventionally be provided with dispersions based on different polymers, and therefore one of ordinary skill in the art would be suggested to provide such as dispersion to provide the desired sealing. (2) for Spriestersbach '102 in view of Heimann, Heimann also provides that various resins can be used, which would suggest that mixtures of these resins can be used to provide the desired features. Column 15, lines 25-30.

Claim 24: (1) Spriestersbach '102 provides that polyurethane coatings (elastomeric as shown in claim 26) can be provided and the coating will be crack bridging to at least some extent because the layer will cover the crack. Column 2, lines 30-35 (note the thickness of the coating). (2) for Spriestersbach '102 in view of Heimann, Heimann also provides that epoxy and polyurethane coatings can be used, and the

thickness of the film would also provide crack bridging to at least some extent because the layer will cover the crack. Column 15, lines 1-30.

Claims 27-28: (1) Spriestersbach '102 provides the use of polyurethane coatings, which the Examiner takes Official Notice are conventionally provided as thermosetting materials, and thus would at least be suggested to be thermosetting (column 2, lines 30-35). Furthermore, as to the use of epoxies as in claim 28, the Examiner takes Official Notice that epoxies are also conventional thermosetting materials used for protection layers, and thus would also be suggested for use. (2) for Spriestersbach '102 in view of Heimann, Heimann also provides that epoxy and polyurethane coatings can be used, and that the coating can be thermosetting. Column 15, lines 25-30 and column 22, lines 35-45.

Claim 29: (1) Spriestersbach '102 provides the suggestion of a further third polymer layer by the same duplication of parts reasoning provided for claim 18. (2) for Spriestersbach '102 in view of Heimann, Heimann also provides that a third "sealing" layer can be provided. Column 15, lines 1-15.

26. Claims 25, 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spriestersbach '102, alone, or optionally, further in view of Heimann as applied to claims 18-24 and 27-29 above, and further in view of Shihadeh (US 3980597).

Spriestersbach '102, alone, or optionally, further in view of Heimann teaches all the features of these claims except (1) the reinforcing of the crack-bridging layer with glass fiber fabric (claims 25, 26) and (2) the bitumen surface protection layer (claim 30).

However, Shihadeh teaches that it is well known to provide bitumen (tar)/polyurethane containing sealing layers against concrete/reinforced concrete surfaces to seal against the weather. Column 1, lines 20-30, column 3, lines 1-10, column 4, lines 10-25 and 50-55 and figure 1. The coating can also be provided with cloth or fiberglass underlays or inlayers. Column 5, lines 45-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spriestersbach '102, alone, or optionally, further in view of Heimann to provide a sealing layer containing bitumen over the provided layer coated reinforced concrete to provide further weather protection in use as suggested by Shihadeh, as Shihadeh provides that this is a desirable protection for reinforced concrete articles. Furthermore, the layer would also bridge cracks because of its thickness and would be suggested to have a glass fiber (fiberglass) fabric reinforcement inlay given the teaching of Shihadeh to provide cloth or fiberglass inlayers in the coating, which would suggest that the fiberglass can also be provided in a "cloth" or "fabric" form, given the use of both cloth and fiberglass.

Double Patenting

27. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

28. Claim 31 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,224,943. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of 6,224,943 teaches all the required features of claim 31 of the present application, including the preparing of a multilayer surface protection coating for metal armor reinforced concrete (claim 1), applying a first layer of zinc connected with the metal armoring of the concrete in an electrically conductive way (claims 1,3), and applying a cover sealing layer (either polyurethane of claim 1 or epoxy of claim 5).

29. Claim 32 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,224,943 in view of

Shihadeh (US 3980597). The claims of US 6,224,943 teach all the features of this claim except the bitumen coating, however, this is suggested by Shihadeh for the reasons given in paragraph 21 above.

30. Claim 31 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6-10 of U.S. Patent No. 6,376,102. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of 6,376,102 teaches all the required features of claim 31 of the present application, including the preparing of a multilayer surface protection coating for reinforced concrete (claims 6, 10), applying a first layer of zinc alloy connected with the metal armoring (zinc coating) of the concrete in an electrically conductive way (directly on) (claim 6), and applying a cover sealing layer (polyurethane of claim 10).

31. Claim 32 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6-10 of U.S. Patent No. 6,376,102 in view of Shihadeh (US 3980597). The claims of US 6,376,102 teach all the features of this claim except the bitumen coating, however, this is suggested by Shihadeh for the reasons given in paragraph 20 above.

32. Claims 18-25 and 27-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No.

6,376,102, alone, or optionally, in view of Heimann. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of 6,376,102 teaches all the required features of claims 18-25 and 27-29 of the present application, including the preparing of a multilayer surface protection coating for reinforced concrete (claims 6, 10), applying a first layer of zinc alloy connected with the metal armoring (zinc coating) of the concrete in an electrically conductive way (directly on) (claim 6), and applying a surface protection layer of low viscosity polymer (polyurethane of claim 10), except that US 6,376,102 does not explicitly provide that a third layer, a surface protection layer, is provided over the second layer of polymer. However, (1) as to US 6,376,102 alone, as noted by *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), duplication of parts, such as, in this case, duplication of the polymer layer to provide a second polymer layer, would have no patentable significance. For example, two thin layers of the polymer could be provided rather than one thick layer. (2) as to US 6,376,102 in view of Heimann, Heimann further shows providing corrosion protection for metals by way of surface coatings (column 1, lines 15-30), where the surface to be protected can include existing structures with metal reinforcement (column 10, lines 40-45) and a surface base coated with zinc (column 17, lines 25-30), and the protective coating can be applied as a series of continuous (note the thickness) polymer films, such as three layers of polyurethane containing films to provide different features in the different layers (column 14, line 60 through column 15, line 35) and applied as low viscosity polymers (column 23, lines 35-40). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify US 6,376,102 to apply multiple polymer layers as taught by Heimann to provide different protective features on the zinc coating of US 6,376,102 given that Heimann teaches the protection can be desirable on zinc coated surfaces and structures with metal reinforcement. The other dependent claims are suggested for the reasons discussed with regard to paragraph 25 (noting that US 6,376,102 provides the discussed polyurethane features in the claims).

33. Claims 25, 26 and 30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,376,102 alone, or optionally, in view of Heimann in view of Shihadeh (US 3980597). The claims of US 6,376,102 alone, or optionally in view of Heimann teach all the features of this claim except the bitumen coating (as discussed in paragraph 32 above), however, this is suggested by Shihadeh for the reasons given in paragraph 26 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katherine A. Bareford/
Primary Examiner, Art Unit 1792